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Complete Specification for the invention entitled:

A POWDER GUN FOR INSECTICIDE

The following statement is a full description of this invention, including the best method of performing it known to me:

ABSTRACT

There is an insecticide powder gun for treating insect infestations or the like. The gun includes a nozzle assembly and a trigger operated gas valve for dispensing a burst of pressurised gas through the nozzle assembly. The nozzle assembly has a first jet for forming the burst of gas into a stream in the direction of the nozzle outlet and a second jet connected to a supply of insecticide powder and located closely adjacent to and substantially at right angles to the gas stream. In use of the gun the burst of pressurised gas draws powder in through the second jet to mix with the gas and form a powder cloud emanating from the nozzle outlet.

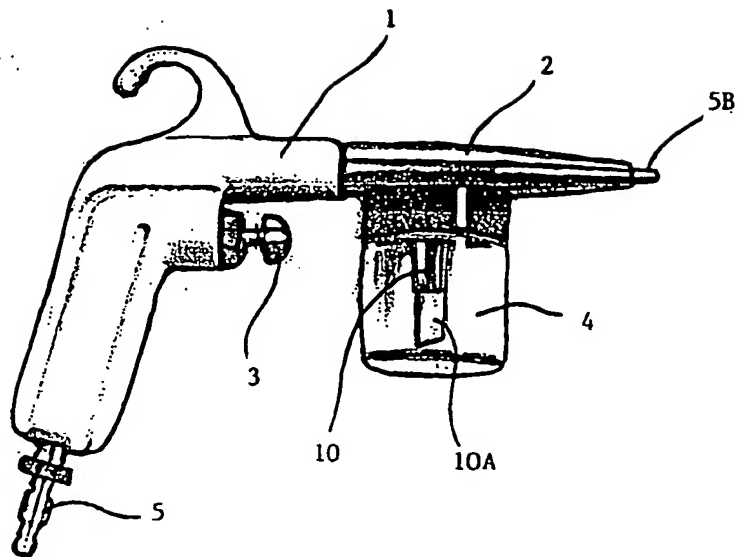


FIGURE 1

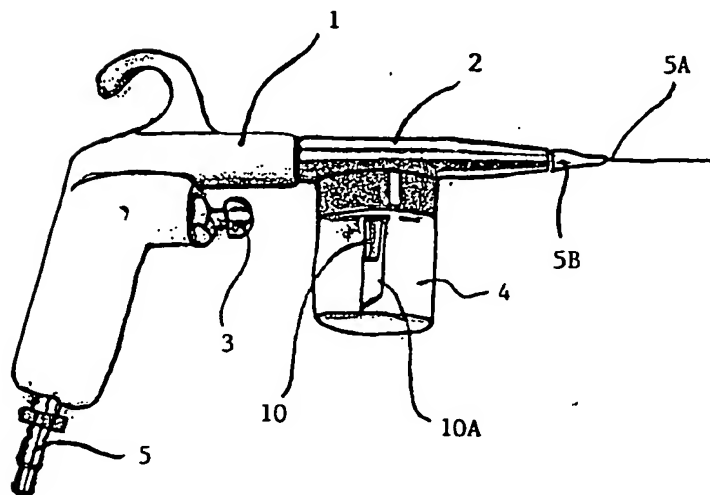
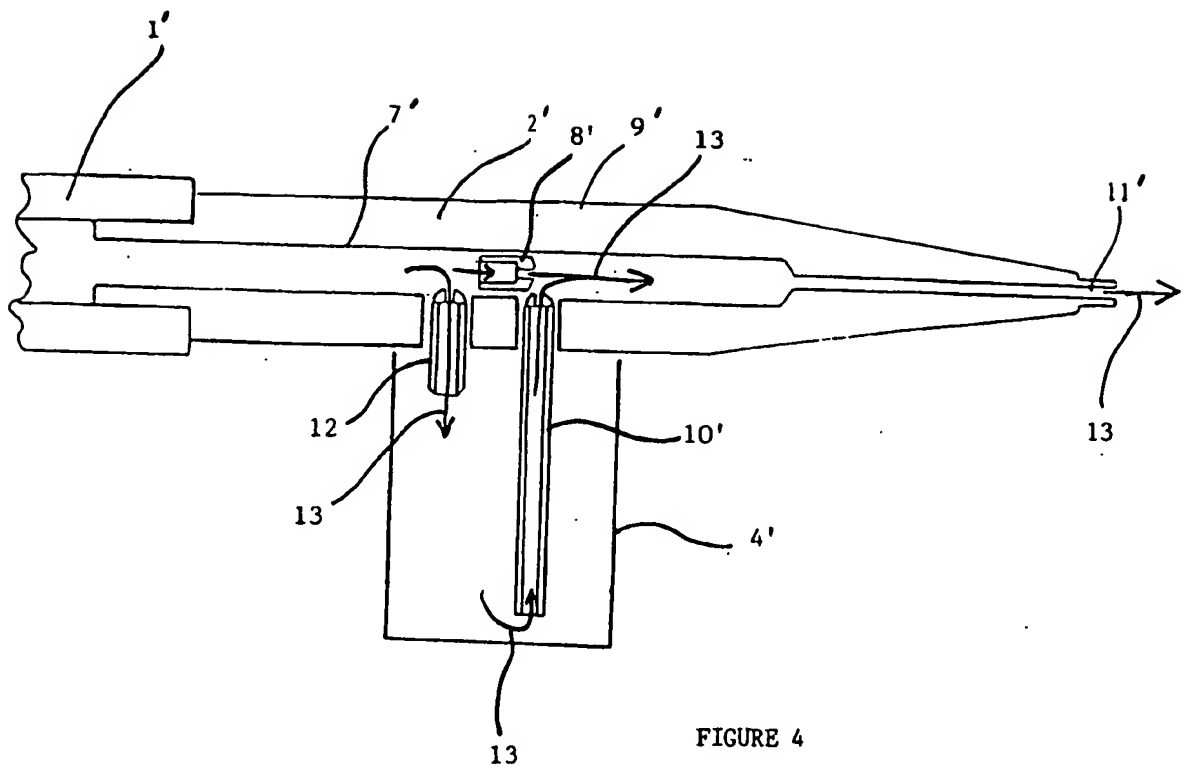


FIGURE 2



A POWDER GUN FOR INSECTICIDE

BACKGROUND OF THE INVENTION

This invention relates to apparatus for treating pests. More particularly although not exclusively it discloses an applicator for administering insecticide to termites (white ants).

Because of strict regulations governing the use of insecticides in habitable dwellings it is no longer permissible to flood wall cavities with chemicals in order to treat termite infestations. Powder insecticides must now be applied directly onto the insects or their workings. While there are various forms of puffers for squirting arsenic powder or the like into termite infested areas these tend to be unreliable in terms of spray density. They are also cumbersome to use.

SUMMARY OF THE INVENTION

It is therefore an object of this invention to ameliorate the aforementioned disadvantages and accordingly an insecticide powder gun is disclosed for treating termite infestations or the like, said gun including a nozzle assembly and a trigger operated gas valve for dispensing a burst of pressurised gas through said nozzle assembly, the nozzle assembly having a first jet for forming said burst of gas into a stream in the direction of the nozzle outlet and a second jet connected to a supply of said insecticide powder and located closely adjacent to and substantially at right angles to said gas stream whereby in use of the gun said burst of pressurised

gas draws powder in through said second jet to mix therewith and form a powder cloud emanating from said nozzle outlet.

Preferably the nozzle outlet is adapted for the fitting of a blunt hypodermic needle or the like to assist the formation and application of said powder cloud.

BRIEF DESCRIPTION OF THE DRAWINGS

One currently preferred form of the invention will now be described with reference to the attached representations in which:

Figures 1 and 2 show a perspective views of a first embodiment of an insecticide powder gun according to this concept.

Figure 3 is a schematic cross-sectional view of the the gun nozzle of figure 1 showing the arrangement of the jets, and

Figure 4 is a schematic cross-sectional view of a second embodiment of the insecticide powder gun.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring first to figures 1 and 2 there is a gun 1 having a nozzle assembly housing 2, a trigger operated gas valve 3 and insecticide powder bottle 4. There is an inlet fitting 5 for connection to a supply bottle of high pressure air (not shown). While with this embodiment the bottle is preferably charged to about 100 psi the invention is not limited to any particular pressure. Depression of the trigger allows a burst

of air to pass from the bottle out through the nozzle assembly.

Preferably as shown in figure 2 an 18 gauge blunt hypodermic needle 5A may be push fitted onto the nozzle outlet 5B to improve formation and placement of the powder cloud in confined spaces as described later

The construction of the nozzle is best shown in figure 3. It comprises the housing 2 with a threaded conduit 7 the length thereof. There is a gas jet 8 turned into the inlet end of the conduit. This jet is adapted to form an air stream (arrow 8A) in region 9 immediately above the outlet of a second jet 10 which extends up from an intake tube 10A in the insecticide supply bottle 4 referred to earlier and fitted to the underside of the nozzle assembly. This tube 10A reaches down to the bottom of the bottle and is preferably cut off at an angle as shown. During operation of the gun the 100 psi air supply is regulated to a supply pressure of preferably about 15 psi which is directed through the jet 8 upon activation of the trigger valve 3. The aforementioned air stream emanates from the jet 8 in the direction of the nozzle outlet 11. As this stream passes across the second jet 10 a quantity of powder such as for example Triflumurin is drawn up from the bottle through the jet to mix with the outgoing stream. While the exact fluid dynamics of the process has not at this stage been fully researched it is believed that some of the air passes down through the jet 10 to enter the powder

bottle 4. The displaced air is forced out through this same jet 10 carrying the powder with it.

It has been found through experimentation by the inventor that a suitable jet diameter is of the order of 1 mm and that the most suitable dispersion of powder is obtained by placing the jet outlets about 5 mm apart. The jets preferably also intersect and at an angle of about 90 degrees.

In use of the gun it is preferably connected by a length of flexible pressure hose to a one litre bottle of compressed air for mobility in confined spaces. Intermittent activation of the trigger dispenses short range clouds of Triflumurin powder which can be accurately directed onto termite workings, tracks or nests without contaminating the surrounding environment.

With the second embodiment of the invention shown in figure 4 the corresponding components of the gun are indicated by the same number as with the first embodiment but with the addition of an accent ('). In this case the air jet '8' has been shortened so as to provide space immediately upstream for a second conduit 12 which extends down into the powder bottle 4'. This has been found to improve the flow of powder up through the jet 10' by providing a positive air pressure in the bottle. The flow of air and powder with this embodiment is indicated by arrows 13.

For the purposes of this specification expressions such as "above", "up", "underside", "bottom", and "down" etc. refer to the gun in one position of use as illustrated and are not to be read as necessarily limiting.

It will thus be appreciated that this invention at least in the form of the embodiment described provides a novel and improved device for applying insecticide powder. Clearly however the example disclosed is only the currently preferred form of the invention and a wide variety of modifications may be made which would be apparent to a person skilled in the art. For example the shape and configuration of the gun housing as well as the size and placement of the jets in the nozzle assembly may all be changed according to application or design preference.

The Claims:

1. An insecticide powder gun for treating insect infestations or the like, said gun including a nozzle assembly and a trigger operated gas valve for dispensing a burst of pressurised gas through said nozzle assembly, the nozzle assembly having a first jet for forming said burst of gas into a stream in the direction of the nozzle outlet and a second jet connected to a supply of insecticide powder and located closely adjacent to and substantially at right angles to said gas stream whereby in use of the gun said burst of pressurised gas draws powder in through said second jet to mix therewith and form a powder cloud emanating from said nozzle outlet.

2. The insecticide powder gun as claimed in claim 1 wherein a gas supply conduit is fitted which extends from said nozzle assemble upstream of said first jet into said supply which comprises a sealed container of said insecticide powder associated with said gun.

3. The insecticide gun as claimed in claim 2 wherein said supply container of insecticide powder is fitted to the underside of the nozzle assembly.

4. The insecticide gun as claimed in claim 3 wherein the diameters of said jets are about 1 mm.

5. The insecticide gun as claimed in claim 4 wherein the outlet of said first jet is located about 5 mm from the outlet of said second jet and at substantially a right angle thereto.

6. The insecticide gun as claimed in claim 5 wherein the nozzle outlet is adapted for fitting a hypodermic needle to improve formation and placement of the powder cloud in confined spaces.

7. An insecticide gun for treating insect infestations or the like, said gun being substantially as described herein with reference to figures 1 to 3 or figure 4.

Dated this 24th day of October 2000

Keith Bayard Rowland
By His Patent Attorney
MICHAEL ANDERSON-TAYLOR

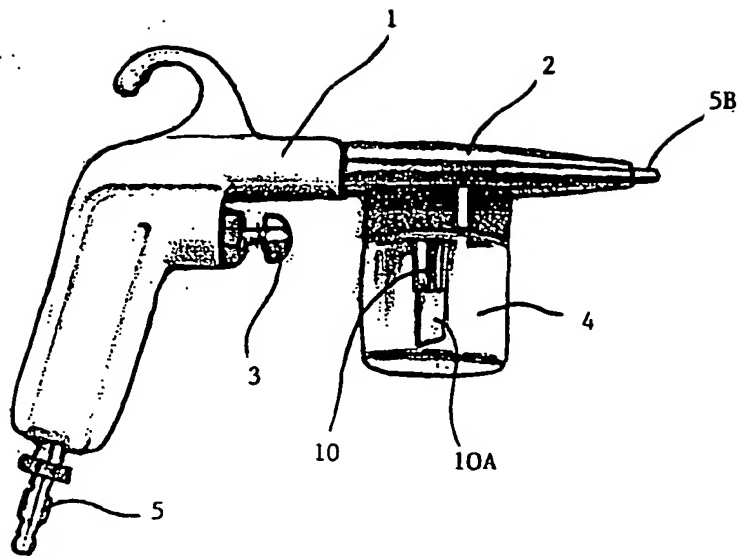


FIGURE 1

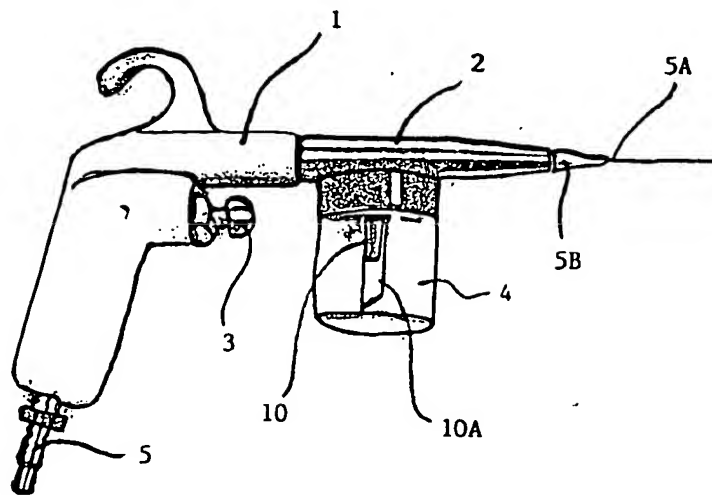


FIGURE 2

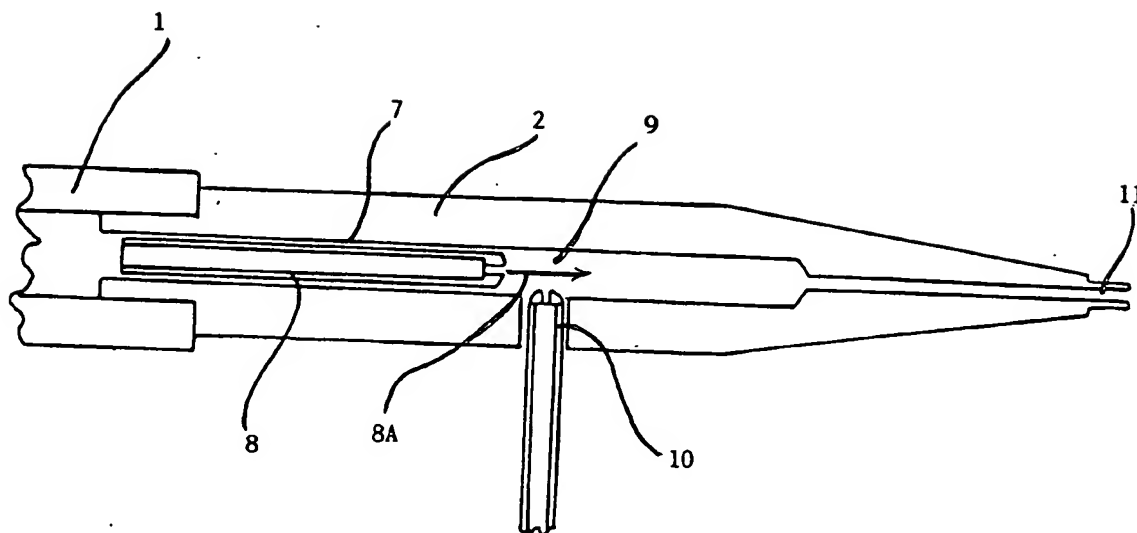


FIGURE 3

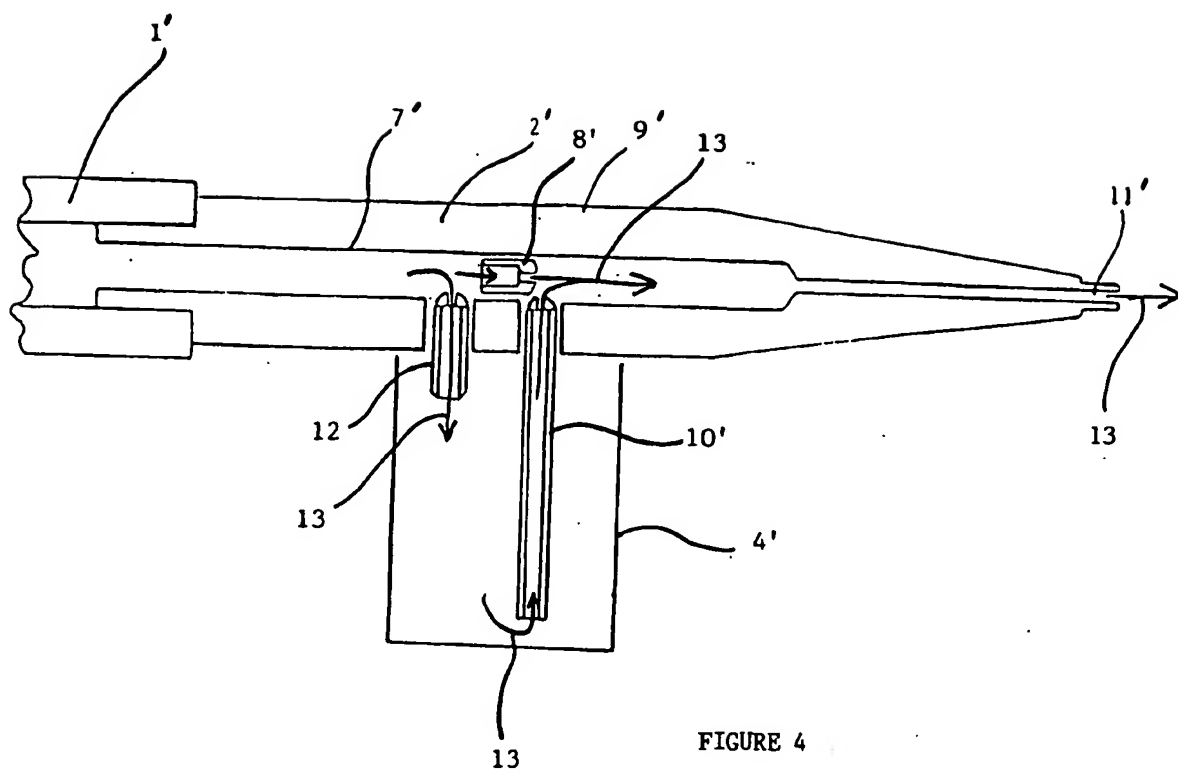


FIGURE 4

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